Distance learning and a prescribed burn at Homestead National Monument of America

By Amy Garrett

LONG-DISTANCE PHONE CALLS used to be the next best thing to being there. In 2003, long-distance learning technology created an experience just like being there. For example, students from two Nebraska high schools connected with on-site professionals at Homestead National Monument of America in Beatrice, Nebraska, during the annual prairie burn in May 2003. The real-time, curriculum-based education program at Homestead is a model for how distance learning can be integrated into a park's interpretation and education programs.

As the prescribed fire burned in the background, students conversed with wildland firefighter and natural resource management specialist Jesse Bolli as he discussed fire ecology, the tools of wildland firefighting, and the beneficial effects of fire on the tallgrass prairie. Interacting with knowledgeable professionals on the scene, like Bolli and Jim Loach, associate regional director of the Midwest Regional Office, makes this distance-learning experience exceptionally rewarding for students. As events unfold on the prairie, students ask questions that stimulate discussion. This method—made possible through a partnership with the Southeast Nebraska Distance Learning Consortium and Educational Services Unit 5—provides a learning opportunity for students that they otherwise would not have.

"Students and NPS staffs were part of the action but in the safety and convenience of their classrooms and offices."

Amy Garrett, education coordinator for Homestead National Monument of America, controls the operation of the distance-learning cart while Jim Loach, associate regional director, and Jesse Bolli, firefighter and resource manager, discuss the prescribed burn and answer students' questions. Garrett exclaimed, "We're only limited by our imaginations on how we use this technology."

Students remotely viewed firefighters using hoses and drip torches during the annual prairie burn at Homestead. Long-distance technology is an "exciting tool," remarked Mark Engler, superintendent of the national monument. "Many times people like to get into the thick of the action. This allows students to experience that while in the safety of their classrooms."

The monument maintains a four-year, prescribed-burn cycle that simulates the historical fire regime. Each year a third of the tallgrass prairie is burned on a rotational basis; every fourth year no burn is ignited. Historically, lightning strikes have started fires on the tallgrass prairie, and Native Americans introduced fire to bring bison herds back to graze on grass. They also used fire in warfare and protected their villages by burning firebreaks around them.

During the burn, students were afforded panoramic views of the prairie via the distance-learning cart, which is equipped with a computer and cameras. The cart is connected to a power source and fiber optics. The power and fiber-optic connections are hidden under four artificial boulders located around the visitor center. For the last couple of years park and public educators have used this distance-learning program to explore various uses of the equipment to better serve students and to support required educational standards. Moreover, through NPS Parks As Classrooms grants, the monument has acquired additional tools for use with the new distance-learning technology. For example, calculator-based labs, graphing calculators, and global positioning systems enhance resource-based learning activities. In addition to prescribed burns, these tools are used to monitor water quality, track erosion of the monument's Cub Creek, and explore tallgrass prairie biota such as insects and animals.

While students interacted through distance-learning technology, Midwest Region staff members saw the event take place over the Internet via video-streaming equipment. Those viewing the burn over the Internet were not able to interact with the rangers, but they witnessed the prescribed burn in real time. Hence, students and NPS staffs were part of the action but in the safety and convenience of their classrooms and offices. ■

amy_garrett@nps.gov
Park Ranger, Homestead National Monument of America, Nebraska